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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,589	03/30/2004	R. Bharat Rao	2003P04755US01	3220

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EXAMINER	
PHONGSVIRAJATI, POONSIN	
ART UNIT	PAPER NUMBER
3686	
MAIL DATE	DELIVERY MODE
11/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/812,589	RAO ET AL.	
	Examiner	Art Unit	
	SIND PHONGSVIRAJATI	3686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10,12-15,17-30 and 32-36* is/are pending in the application.

4a) Of the above claim(s) *none* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10,12-15,17-30 and 32-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/15/2010 has been entered.

Status of Claims

1. In response to communications filed on 04/15/2010, claims 1, 13, 30, and 32 are currently amended, claims 2, 11, 16, and 31 are canceled. Claims 34-36 are new. Claims 1, 3-10, 12-15, 17-30, and 32-36 are now pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The 112(2) rejection to claims 1-10, 12-15, 17-30 are withdrawn given Applicant's amendments.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. The 101 rejection to claims 1-29, 32-33 are withdrawn given Applicant's amendments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1, 3-4, 8-10, 12-25, and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pritchard et al. (US 4,491,725) in view of Chen et al. (US 6,917,926).

5. As to **Claim 1**, Pritchard teaches a method for processing medical information, comprising the steps of: receiving a medical claim from a health care provider which is to be submitted to a insurance company (Abstract, insurance company reads on "target payer"); automatically classifying the medical claim using a model that is trained to predict a disposition of the claim by the insurance company (col. 3 lines 31-38); and directing the medical claim for further processing based on the medical claim (col. 8

lines 18-30); wherein the steps of receiving, classifying, and directing are performed by a claims analysis system (Summary of the Invention).

But Pritchard does not disclose automatically classifying the medical claim using a set of one or more trained classifiers, each of the one or more classifiers trained by a training system using one or more machine learning techniques to predict a disposition of the claim by the target payer using training data that includes previously submitted claims and corresponding outcomes; wherein the step of automatically classifying the medical claim comprises predicting a probability or score of the medical claim being accepted or rejected by the insurance company. Chen does teach automatically classifying the medical claim using a set of one or more trained classifiers, each of the one or more classifiers trained by a training system using one or more machine learning techniques to predict a disposition of the claim by the target payer using training data that includes previously submitted claims and corresponding outcomes (Abstract, col. 2 lines 44-54, col. 4 lines 44-64); wherein the step of automatically classifying the medical claim comprises predicting a probability or score of the medical claim being accepted or rejected by the insurance company (Abstract, col. 7 lines 38-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of Pritchard to include the machine learning method of Chen for the motivation for attempting to predict medical outcomes (Chen, lines 47-51).

6. As to **Claim 3**, Pritchard teaches the method of claim 1, wherein the step of automatically classifying the medical claim comprises classifying the medical claim as

accepted or classifying the medical claim as rejected and a basis for rejecting the medical claim (col. 8 lines 4-20).

7. As to **Claim 4**, Pritchard teaches the method of claim 3, wherein the medical claim can be classified as rejected as not covered by the payer (col. 7 lines 33 36).

8. As to **Claim 8**, Pritchard teaches the method of claim 1, wherein the step of directing the medical claim comprises sending the medical claim to the target payer if the medial claim is classified as being accepted (col. 8 lines 11-20).

9. As to **Claim 9**, Pritchard teaches the method of claim 1, wherein the step of directing the medical claim comprises sending the medical claim back to the provider if the medial claim is classified as being rejected (col. 8 lines 4-8).

10. As to **Claim 10**, Pritchard teaches the method of claim 1, wherein the step of directing the medical claim comprises automatically modifying the medial claim if the medial claim is classified as being rejected (col. 8 lines 4-8).

11. As to **Claims 12, 17, and 18**, Pritchard does not specifically disclose the method of claim 1, wherein the training data further comprises domain-specific criteria in a domain knowledge base and wherein the classification model is trained to analyze one or more of a plurality of departments of the target payer or payers of the healthcare provider. Chen does teach wherein the training data further comprises domain-specific criteria in a domain knowledge base and wherein the set of one or more trained classifiers is trained to analyze one or more of a plurality of sub-domains (col. 6 lines 14-20). It would have been obvious to one of ordinary skill in the art at the time of the

invention to have the training data further comprises domain-specific criteria in a domain knowledge base and wherein the set of one or more trained classifiers is trained to analyze one or more of a plurality of departments and payers for the same motivation as claim 1.

12. As to **Claim 13**, Pritchard does not specifically disclose the method of claim 1, further comprising automatically updating a set of trained classifiers associated with a target payer using data derived from final dispositions of medical claims by the target payer. Chen does teach updating a set of trained classifiers associated with any type of data set to derive an outcome based on the training set (col. 3 lines 59-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the disclosure of Pritchard to automatically updating a t set of trained classifiers associated with a target payer using data derived from final dispositions of medical claims for the same motivation as claim 1.

13. As to **Claims 14 and 15**, Pritchard does not specifically disclose the method of claim 13, wherein automatically updating is performed continuously or periodically and automatically updating comprises re-training new classification model. Chen does teach wherein automatically updating is performed continuously or periodically (col. 3 lines 37 to col. 4 line 10) and automatically updating comprises re-training new classification model (col. 3 lines 37 to col. 4 line 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to have updated the training

records continuously or periodically and updating the new classification model for the same motivation as claim 1.

14. As to **Claim 19**, Pritchard teaches the method of claim 1, wherein the set of one or more trained classifiers is unique to the health care provider (col. 7 lines 46-59).

15. As to **Claim 20**, Pritchard teaches the method of claim 1, wherein the model is unique to the target payer (col. 5 lines 22-32).

16. As to **Claim 21**, Pritchard teaches the method of claim 1, wherein the set of one or more trained classifiers is unique to the healthcare provider/target payer relationship (col. 8 lines 25-41).

17. As to **Claim 22**, Pritchard teaches the method of claim 1, wherein the set of one or more trained classifiers is unique to one or more target payers in a geographical region (col. 4 lines 37-42).

18. As to **Claim 23**, Pritchard teaches the method of claim 1, wherein the set of one or more trained classifiers is unique to a medical domain (col. 4 lines 37-42).

19. As to **Claim 24**, Pritchard teaches the method of claim 1, wherein the step of automatically classifying the medical claim comprises predicting an expected final compensation for medical claims (col. 11 lines 14-18).

20. As to **Claim 25**, Pritchard teaches the method of claim 24, wherein the expected final compensation for the medical claims is provided as a distribution of compensations with associated probabilities (col. 11 lines 14-18, wherein the probabilities is 100%).

21. As to **Claim 32**, Pritchard teaches a method for processing medical information, comprising the steps of: receiving a plurality of medical claims from a health care provider that are to be submitted to one or more target payers (Abstract); and automatically predicting an expected cash flow for each medical claim (col. 9 lines 60-65), or a subset of the medical claims, using one or more models that are trained to predict a disposition of the medical claims by the one or more target payers (col. 5, lines 8-32).

But Pritchard does not disclose the said model being a classification model. However, using a classification model is old and well known as evidence (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the teachings of Pritchard to include the set of trained classifiers of Chen for the motivation for attempting to predict medical outcomes (Chen, lines 47-51).

3. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pritchard (US 4,491,725) in view of Chen et al. (US 6,917,926) in further view of Hammond et al. (US 5,613,072).

22. As to **Claim 33**, Pritchard teaches the method of claim 32, wherein automatically predicting an expected cash flow comprises: predicting an expected compensation for each medical claim (col. 9 lines 60-65), but the combination of Pritchard and Chen does not specifically disclose predicting a resolution time for resolving each medical claim; and determining the expected cash flow associated with the medical claims by summing

the expected compensation and resolution times for the medical claims. Hammond does teach predicting a resolution time for resolving each medical claim (col. 16 lines 27-37); and determining the expected cash flow associated with the medical claims by summing the expected compensation and resolution times for the medical claims (Fig. 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to have included predicting a resolution time for resolving each medical claim and determining the expected cash flow associated with the medical claims by summing the expected compensation and resolution times for the medical claims within the teachings of Pritchard and Chen for the same motivation given in claim 32.

23. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pritchard (US 4,491,725) in view of Chen et al. (US 6,917,926) in further view of Applicant Admited Prior Art (AAPA).

24. As to **Claim 5**, the combination of Pritchard and Chen does not specifically disclose the medical claim being classified as rejected for exceeding a maximum limit of the insurance company. However, it is well known in the art that insurance companies reject medical claims based upon the fact that the patient has exceeded their medical coverage limit for their policy, and official notice to that effect is hereby taken. For example, an auto insurance policy may have a policy liability limit of $20,000 for a "per person" basis, the insurance company may reject a medical claim if the claim exceeds said liability limit amount. Since Applicant failed to adequately traverse Examiner's finding of official notice, the office notice will be taken as Applicant admitted prior art. It

would have been obvious to one of ordinary skill in the art at the time of the invention to have classified a claim as rejected based upon the target payer exceeding a maximum limit for the motivation for not paying more than the insured is entitled to for his/her coverage and meeting the requirements of the patient's insurance carrier (col. 8 lines 3-4).

25. As to **Claims 6 and 7**, the combination of Pritchard and Chen does not specifically disclose the method of claim 2, wherein the medical claim can be classified as rejected for requiring further information or an attachment by the target payer and wherein the medical claim can be classified as rejected as including an incorrect combination of charges. However, it is well known in the art to reject a medical claim for requiring further information, for example, an insurance company may require disclosure to the medical procedure performed to ascertain whether the medical procedure was experimental. The status of the claim would remain rejected until further evidence is submitted. It is also well known to reject a claim based upon an incorrect combination of charges, and official notice to that effect is hereby taken. Since Applicant failed to adequately traverse Examiner's finding of official notice, the office notice will be taken as Applicant admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of the invention to have rejected a medical claim for requiring further information and to reject a medical claim as including an incorrect combination of charges for the same motivation for not paying more than the insured is entitled to for

his/her coverage and meeting the requirements of the patient's insurance carrier (col. 8 lines 3-4).

26. Claim(s) 26-29 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Pritchard (US 4,491,725) in view of Chen et al. (US 6,917,926) in further view of Beazley (US 2003/0149594).

27. As to **Claims 26-29**, the combination of Pritchard and Chen does not specifically disclose wherein the step of automatically classifying further comprises predicting an expected time required to accept medical claims, including an expected time required to provide additional information, or an expected time to modify the medical claims and wherein the expected times are provided as a probability distribution with associated probabilities. Beazley does teach wherein the step of automatically classifying further comprises predicting an expected time required to accept medical claims, including an expected time required to provide additional information (paragraph 83, 101-105, and 123) wherein the expected times are provided as a probability distribution with associated probabilities (paragraphs 117-119). It would have been obvious to one of ordinary skill in the art at the time of the invention to have included predicting an expected time required to accept medical claims, where the expected times are provided as a probability distribution with associated probabilities within the disclosures of Pritchard and Chen for the motivation for same motivation given in claim 1.

28. As to **Claims 30 and 32**, claims 30 and 32 substantially repeat similar limitations to claims 1 are rejected using the same rationale and reasoning.

29. As to **Claims 34-36**, Pritchard does not specifically disclose wherein for each the one or more trained classifiers, a corresponding accuracy score is obtained and when an accuracy score is below a desired threshold, the corresponding trained classifier is removed from the set of one or more trained classifiers used to automatically classify the medical claim. Chen does teach of utilizing the relative score from each learner/parameter (col. 7 lines 35-43) to make prediction for medical outcomes based on the measured accuracies of positive results and negative result (col. 7 lines 44-63). When the weighted combination of these parameters (reads on "accuracy score", col. 8 lines 33-57) is below a desired threshold (col. 6 lines 10 lines 43-65), the corresponding trained classifier is resampled from the set of one or more trained classifiers to create the next generation of learners used to automatically classify the medical claim (col. 7 lines 13-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated this feature of Chen within Pritchard for the motivation for increasing the accuracy classifying medical claims (col. 4 lines 46-59).

Response to Arguments

1. Applicant's arguments filed 04/15/2010 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIND PHONGSVIRAJATI whose telephone number is (571) 270-5398. The examiner can normally be reached on Monday - Thursday 8:00am-5:00pm (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry O'Connor can be reached on (571) 272-6787. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or (571) 272-1000.

/S. P./
Examiner, Art Unit 3686

18 November 2010

/Gerald J. O'Connor/
Supervisory Patent Examiner
Group Art Unit 3686